



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,593	01/21/2004	Eric A. Merz	117097	3233
25944	7590	02/02/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			VO, ANH T N	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,593

Applicant(s)

MERZ ET AL.

Examiner

Anh T.N. Vo

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/21/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

The references cited on PTO 1449 have been considered.

Specification

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claims Objection

Claims 1, 3, 9, 20 and 28-29 are objected to in that “the ratio” on line 7 of claim 1 should be changed to –a ratio--, “the cross-sectional area” on line 2 of claim 3 should be changed to –a cross-sectional--, “28” on line 1 of claim 9 should be changed to --8--, “the at least one capillary element” on line 1 of claim 20 should be changed to –at least one capillary element--, “the portion” on line 6 of claim 28 should be changed to –a portion, and “the volume” on line 2 of claim 29 should be changed to --a volume-- for proper support. Correction is required.

Claim Rejections

Claim Rejections - 35 USC § 112

Claims 14-15, 22-23 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction or clarification is required.

In claim 14, the description “the ratio is between 0.5 to 1 and 2 to 1” is misdescriptive because it is not consistent with what is recited in claim 1. For example, claim 1 recites on line 8 that the ratio is between .3 to 1 and 3.0 to 1. The same is true for claims 15 and 30.

In claim 22, it is unclear what the “first type” on line 3, “second type” on line 5 and “chamber configuration” on lines 4 and 5 are, how the lids can be “manufactured” and “selected”, and how the selected lid can be “applied” on line 9, and how the steps of manufacturing, selecting and applying are read on the preferred embodiment. Insofar as understood, no such steps are seen on the drawings.

In claim 23, it is unclear how what the “component parts” on line 2 are and how the recitation “first type of lid”, “first negative pressure material”, “second lid” and “second pressure material chamber configuration” and “fluid container” is read on the preferred embodiment. Insofar as understood, no such lids, container and configurations is seen on the drawings. Also, it is not understood how the lids and “negative pressure material element” can be “selected”. The recitation “fluid container” on line 13 is confusing because it is unclear if this is additional “container” or further recitation of the previously claimed “container” on line 1.

In claim 25, it is unclear how the recitation “porous element” is read on the preferred embodiment. Insofar as understood, no such element is seen on the drawings.

The remaining claims are dependent from the above rejected claims and therefore also considered indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 24-28 are rejected under 35 USC 102 (b) as being anticipated by Tsuchii (US 6,398,353).

Tsuchii discloses in Figures 1-12 an ink cartridge comprising:

- a fluid container having at least one free fluid reservoir (3) located in the container in

side-by-side relationship with a negative pressure medium containing chamber (4) and fluidly connected thereto;

- an fluid delivery port directly connecting the at least one free fluid reservoir (3) and a fluid ejector (11) to deliver fluid to the fluid ejector directly from the free fluid reservoir (3); and
- wherein the negative pressure medium containing chamber (4) are located, at least in part, over the fluid delivery port (Figure 1).

Claim Rejections - 35 USC § 103

The remaining are dependent from the above rejected claims The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 and 12-23 and 29-30 are rejected under 35 USC 103 (a) as being unpatentable over Tsuchii (US 6,398,353) in view of Dowell (US 6,773,097).

Tsuchii discloses in Figures 1-12 an ink cartridge comprising:

- a fluid container having at least one free fluid reservoir (3) located in the container in side-by-side relationship with a negative pressure medium containing chamber (4) and fluidly connected thereto;
- an fluid delivery port directly connecting the at least one free fluid reservoir (3) and a fluid ejector (11) to deliver fluid to the fluid ejector directly from the free fluid reservoir (3);
- wherein the negative pressure medium containing chamber (4) are located, at least in part, over the fluid delivery port (Figure 1);
- wherein a filter (9) is located between the fluid delivery port and both the free fluid reservoir and the negative pressure medium chamber;
- wherein the filter contacts a substantial portion of the cross-sectional area of the negative

pressure material (4);

- wherein the negative pressure medium (6) is separated from and located over the filter (9, Figure 9A);
- wherein the negative pressure medium (6) is located over approximately a same amount of area as the free fluid reservoir is located over (Figure 1);
- wherein the filter (9) comprising at least one capillary element or rib (35, 37, 37, Figures 9A-9B) located between the filter (9) and the negative pressure material (6); and
- wherein at least one bubble chamber (space above the ink (13), Figure 1) is located in the fluid container.

However, Tsuchii does not disclose that the ratio of the volume of the free fluid reservoir (3) and the volume of the negative pressure medium containing chamber (4) is between about 0.3 to 1 and 3.0 to 1 as recited in claims 1 and 29, between 0.5 to 1 and 2 to 1 as recited in claim 14 or approximately 1 to 1 as recited in claims 15 and 30.

Nevertheless, Dowel suggests in Figures 1B, 4 and 10-11 an ink cartridge comprising an bubbling chamber (209), a free ink chamber (214) and a negative pressure chamber (210). Wherein the volume of a negative pressure chamber (210) is smaller than the volume of the free fluid chamber (214) at a predetermined ratio for improving performance capability of the cartridge and increasing volumetric efficiency of the ink supply, see lines 51-57, column 8.

It would have been obvious to a person having skill in the art at the time the invention was made to select the negative pressure chamber of Tsuchii smaller than the free ink chamber as suggested by Dowell for the purpose of for improving performance capability of the cartridge and increasing volumetric efficiency of the ink supply.

Noted that, although Dowell does not specify the volume ratios as claimed; however, selecting an optimum ratio for optimizing the supply of ink is considered to be a matter of a design expedient for an engineer. In re Boesch, 617F.2d 272.205USPQ215(CCPA 1980). Lacking of showing any criticality, it would have been obvious to a person having skill in the art

at the time the invention was made to select the volume ratios of Tsuchii as claimed for the purpose of enhancing the ink supply to the head.

With regard to claim 4, the modified ink cartridge of Tsuchii would have the portion of the filter in contact with the negative pressure material (6) which is less than the area of the filter in contact with the free fluid reservoir (3) since the negative pressure chamber is smaller than the free ink chamber.

With regard to claims 22-23, the modified ink cartridge of Tsuchii would be manufactured by the claimed steps of manufacturing, selecting and applying since it has the structure similar to the structure of the claimed fluid tank. Obviously, the lids, the size and shape of negative pressure chamber and the free ink chamber or the negative pressure material of the modified ink cartridge of Tsuchii would be selected to accommodate with the size and shape of a predetermined printing system. Thus, selecting the lids, the chamber configurations and the negative pressure material for the purpose of accommodating with requirement of the predetermined printing device is considered to be a matter of a mechanical design expedient for an engineer that would have been obvious at the time of the invention.

Claims 10-11 and 31 are rejected under 35 USC 13 (a) as being unpatentable over Tsuchii (US 6,398,353) in view of Dowell (US 6,773,097) and further in view of Hayashi et al (US 6,698,871).

Tsuchii in view of Dowell discloses an ink cartridge with all of the limitations of the base claim as stated above but does not disclose that the negative pressure material (6) is made of felt or non-woven material.


Nevertheless, Hayashi et al suggests in Figures 1 using a negative pressure material (1a-1c) made of non-woven material such a felt for decreasing ink residue remaining in the tank, see lines 22-32, column 10.

It would have been obvious to a person having skill in the art at the time the invention was made to employ the pressure material as suggested by Hayashi et al in the modified ink cartridge of Tsuchii for the purpose of decreasing the ink residue remaining in the ink tank.

Art Unit: 2861

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (571) 272-2262. The examiner can normally be reached on Tuesday to Friday from 9:00 A.M. to 7:00 P.M.. The fax number of this Group 2861 is (571) 273-8300.



ANH T.N. VO
PRIMARY EXAMINER
January 24, 2006